



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Adress: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,495	01/04/2006	Malcolm David Macleod	05-1094	8270
20306	7590	03/28/2008		
MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP			EXAMINER	
300 S. WACKER DRIVE			NGUYEN, NG A X	
32ND FLOOR			ART UNIT	PAPER NUMBER
CHICAGO, IL 60606			3662	
		MAIL DATE	DELIVERY MODE	
		03/28/2008	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/563,495	Applicant(s) MACLEOD, MALCOLM DAVID
	Examiner NGA X. NGUYEN	Art Unit 3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 19 December 2007.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 9,18 and 19 is/are allowed.
 6) Claim(s) 1-8,11-17 and 20 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 04 January 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No./Mail Date 8/28/2006
- 4) Interview Summary (PTO-413)
 Paper No./Mail Date. _____
 5) Notice of Informal Patent Application
 6) Other: _____

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1-8, 11-17 & 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyoshi (6281840) in view of Margerum (4481519).

With regard to claim 1, 10 & 20, Prater discloses:

- A plurality of antennas (see column 3, lines 20-23).
- Determining individual antenna signal strengths (see 3, lines 62-65)
- Determining at least one emitter bearing from antenna signal strengths (see column 3-4, lines 66-8).

Margerum discloses:

- Combining for deriving combined antenna signal strengths by forming combinations of 1st and 2nd antenna signals are in two sets with signals in one set having a non-zero phase difference relative to signals the other set (see column 2-4, lines 54-63).

It would have been obvious to modify Miyoshi by incorporating the teaching of Margerum's combination to combine antennas' signals so as the system is enable to determine an emitter bearing.

With regard to claim 2-3 & 11-12, Miyoshi teaches determining emitter bearing is arranged to derive covariance matrix elements from antenna signal strengths and a

Art Unit: 3662

relationship between antenna signal strengths and emitter bearing (see column 5, lines 23-41).

With regard to claim 4-5 & 13-14, Margerum teaches the relative phase difference is in the range 30-120 degrees, and substantially 90 degrees (see column 3, lines 12-24).

With regard to claim 6 & 15, Margerum teaches combining antenna signals with equal gain magnitude and with or without equal phase (see column 3, lines 17-39).

With regard to claim 7 & 17, Margerum teaches that the combining incorporates phase shifting switchable into and out of an antenna signal path (see column 4, lines 6-38).

With regard to claim 8, Margerum teaches that the combining incorporates an adder having two inputs both switchably connected to individual signal paths extending to respective antennas (see column 6, lines 45-51).

Allowable Subject Matter

2. Claim 9 & 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

3. Applicant's arguments filed 12/19/2007 have been fully considered but they are not persuasive.

With respect to claim 1-20, applicant argues that the prior arts failed to teach the claims' limitations.

Response: The application's arguments are moot in view of the new grounds of the rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGA X. NGUYEN whose telephone number is (571)272-5217. The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TARCZA H. THOMAS can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NGA X NGUYEN
Examiner
Art Unit 3662

NXN

/Thomas H. Tarcza/

Supervisory Patent Examiner, Art Unit 3662

Application/Control Number: 10/563,495

Art Unit: 3662

Page 5